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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/939,286	08/20/2001	Stanislaw D. Augustynowicz	KSC-12092	8057

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EXAMINER:

CHEVALIER, ALICIA ANN

ART UNIT	PAPER NUMBER
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1772

DATE MAILED: 01/14/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/939,286

Applicant(s)

AUGUSTYNOWICZ ET AL.

Examiner

Alicia Chevalier

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 October 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4, 8 and 10-37 is/are pending in the application.
- 4a) Of the above claim(s) 17-35 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4, 8, 10-16, 36 and 37 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
- a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

RESPONSE TO AMENDMENT

1. Claims 1-4, 8 and 10-37 are pending in the application, claims 17-35 are withdrawn from consideration due to Applicant's election, in paper #4 filed April 1, 2003 in response to the restriction in paper #2 mailed February 6, 2003. Claims 5-7 and 9 have been cancelled.
2. Amendments to claims in paper #7, filed on October 20, 2003, have been entered in the above-identified application.

WITHDRAWN REJECTIONS

3. The 35 U.S.C. §103 rejections made of record in paper #6, pages 2-7, paragraphs #3-5 have been withdrawn due to Applicant's amendment in paper #7.

NEW REJECTIONS

4. **The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.**

Examiner's Summary of the Invention

5. To the best of the Examiner's knowledge, the base, or independent, claims of the application, are interpreted as follows:

1. Insulation comprising:

- a flexible insulating layer comprises,
 - o a reflection layer made of a metal foil or metalized foil

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- a fill layer containing powder having a particular compressed density
 - a carrier layer made of microglass, paper or a fabric
- where the carrier layer and fill layer comprise a spacer layer.

12. Insulation comprising:

- a plurality of flexible insulating layers comprises,
 - a reflection layer made of a metal foil or metalized foil
 - a fill layer containing powder having a particular compressed density
 - a carrier layer made of microglass, paper or a fabric
- where the carrier layer and fill layer comprise a spacer layer.

Claim Rejections - 35 USC § 103

6. Claims 1-4, 8, 10, 11 and 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pogorski et al. (U.S. Patent No. 6,221,456) in view of Barito et al. (U.S. Patent No. 4,636,415).

Pogorski discloses a thermal insulation to decrease the transfer of heat into or from an insulated system to order to protect a device, such as an appliance, vessel, pipeline or other apparatus, from the effects of a gain or loss of heat from or to the outside environment (*col. 1, lines 18-24*). The insulation panels may be used in a variety of end-uses, e.g. in freezers, refrigerators, hot water heaters, and other domestic or institutional appliances, for insulating vessels and pipes and for special building applications (*col. 8, lines 20-26*).

Regarding Applicant's claims 1-3 and 8 Pogorski discloses a thermal insulation (*title*) panel comprises an inner gas-permeable envelope (*figure 1A reference #3*), an intermediate gas-

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impermeable envelope (*figure 1A reference #7*), and an outer gas impermeable envelope (*figure 1A reference #2*) (*col. 5, lines 42-45*). The inner gas-permeable envelope encloses a fill layer consisting of a plurality of coarse granules and fine particles (*col. 5, lines 45-47*). The outer gas-impermeable envelope is a plastic film with metal layers (*col. 6, lines 21-25*) and reads on Applicant's reflection layer. The inner gas-permeable envelope is made from a woven ^{material} ~~natural~~ of synthetic fiber (*col. 6, lines 33-34*) and reads on Applicant's "carrier layer." The fill layer and the inner gas-permeable layer together form Applicant's "spacer layer." The fine particles are similar to Applicant's "powder."

The insulation panel has a flexibility to enable the panel (*col. 6, lines 39-30*) to be shaped to conform to a three-dimensional object, such as, a rectangle, cylindrical or spherical vessels (*col. 8, lines 9-10*).

Pogorski fails to disclose ^{that} the fine particles, i.e. Applicant's powder, have the claimed properties of claims 1-3 or that the particles are made of silica.

Barito discloses insulation material for refrigeration structures (*col. 1, line 5*).

Barito discloses using powdered silica in the core of an insulating material to provide thinner insulation with the same or better insulating efficiency as thicker prior art insulations (*col. 2, lines 21-26*). The powder has a surface area of at least 150 m²/g (*col. 3, line 9*), a compressed density in the range from about 10 to 20 pounds per cubic foot (*col. 3, lines 37-40*), and a bulk density of 3 to 4 pounds per cubic foot (*col. 5, lines 52-53*). From the ranges of the compressed and bulk densities it is shown that the compressed density is approximately 1 to 10 times the bulk density of the powder.

Pogorski and Barito are analogous because they both disclose insulation material/panels.

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It would have been obvious to one of ordinary skill in the art at the time of the invention to use the silica powder of Barito as the fine particles of Pogorski in order to provide thinner insulation. One of ordinary skill in the art would have been motivated to use the silica powder as the fill layer fine particles because it would allow the insulation to be thinner yet still have the same or better insulating efficiency as thicker prior art insulations. It is desirable to have thinner insulation in order to reduce the over all bulk to conserve space.

Regarding Applicant's claim 4, Pogorski discloses that the inner gas-permeable envelope encloses a fill layer consisting of a plurality of coarse granules and fine particles (*col. 5, lines 45-47*), which reads on Applicant's limitation "wherein the powder is contained on a carrier layer."

Regarding Applicant's claims 10 and 16, while Pogorski does not disclose the thickness of the spacer layer has a thickness of approximately 0.002 to 0.20 inches, he does disclose that heat flow through insulation can be reduced by reducing the thickness (*col. 2, lines 49-53*).

Therefore, the exact thickness of the spacer layer, i.e. the fill layer and the inner envelope, is deemed to be a result effective variable with regard to the heat flow through the insulation. It would have been obvious to one having ordinary skill in the art to have determined the optimum value of a cause effective variable such as thickness of the fill layer and inner envelope through routine experimentation in the absence of a showing of criticality in the claimed thickness. *In re Boesch*, 205 USPQ 215 (CCPA 1980), *In re Woodruff*, 16 USPQ2d 1934, 1936 (Fed. Cir. 1990). One of ordinary skill in the art would have been motivated reduce the thickness to approximately 0.002 to 0.20 inches in order to reduce the heat flow through the insulation. One would have been motivated to reduce the heat flow through the insulation

because ^{that reduction} would decrease the transfer of heat into or from an insulated system and protect the

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device being insulated from the effects of a gain or a loss of heat from or to the outside environment (*col. 1, lines 18-24*).

Regarding Applicant's claims 11 and 14, Porgorski discloses that the outer envelope of the panel may be covered by a protective plastic foam to provide protection against a rupture of the outer envelope due to external causes (*col. 6, lines 45-47*). The protective plastic from reads on Applicant's limitation "an outer casing surrounding the at least one flexible insulation^{ing} layer." *sum*

Regarding Applicant's claim 36, neither Porgorski or Barito specifically disclose *that the* thermal conductivity coefficient k value of the thermal insulation system is approximately 0.09 mW/m-K at below about 1×10^{-4} torr and approximately 2.4 mW/m-K at approximately 1 torr, for insulation having an approximately one inch thickness and boundary conditions of 77K and 290K. However, the presently claimed thermal conductivity coefficient k would have *and is expected in the system* necessarily been present₁ because of the use of similar materials (i.e. a fabric carrier layer, silica powder fill layer, and a metal reflective layer), absent evidence showing that the disclosed prior art products do not necessarily possess the characteristics of the claimed product. *sum*

7. Claims 12-16 and 37 is rejected under 35 U.S.C. 103(a) as being unpatentable over Pogorski et al. in view of Barito et al. as applied to claims 1-4, 8, 10, 11 and 36 above, and further in view of Karpinski (U.S. Patent No. 4,304,824).

Pogorski and Barito are relied upon as described above.

The combination of Pogorski and Barito fail to disclose at least one edge strip adjacent the fill layer and interposed between the carrier layer and the reflection layer and at least one intermediate strip interposed between the carrier layer and the reflection layer, wherein the intermediate strip separates sections of the fill layer.

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Karpinski discloses a flexible modular insulation (*title*) comprising a first flexible laminate film, pellets, and a second flexible laminate (*figure 1*). In order to provide for the manufacture of large sections of insulation and to prevent the destruction of the insulative qualities of an entire panel due to accidental tears of the laminate flexible film, an alternative embodiment shown in figure 3 is preferable (*col. 2, lines 64-68*). A large grid sheet (*figure 3*) with edge strips and intermediate strips, create a plurality of isolated groupings of pellet of the insulating material (*col. 3, lines 1-8*).

Pogorski, Barito and Karpinski are analogous because they all disclose insulation material/panels.

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It would have been obvious to one of ordinary skill in the art at the time of the invention to ^{*and*} large grid sheet of Karpinski ^{*and*} to the fill layer of Pogorski and Barito in order to create a plurality of isolated groupings of particles. One of ordinary skill in the art would have been motivated ^{*combine these teachings and to*} to create the isolated groups of particles because it would provide for the manufacture of large sections of insulation and to prevent the destruction of the insulative qualities of an entire panel due to accidental tears of the laminate.

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ANSWERS TO APPLICANT'S ARGUMENTS

8. Applicant's arguments in paper #7 regarding the previous 103 rejections of record have been considered but are moot since the rejections have been withdrawn.

Conclusion

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

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A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.


10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alicia Chevalier whose telephone number is (571) 272-1490. The Examiner can normally be reached on Monday through Thursday from 8:00 a.m. to 5:00 p.m. The Examiner can also be reached on alternate Fridays

If attempts to reach the Examiner are unsuccessful, the Examiner's supervisor, Harold Pyon can be reached by dialing (571) 272-1498. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9306 for all communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose phone number is (571) 272-0987.

ac

1/9/04


SANDRA M. NOLAN
PRIMARY EXAMINER

1-12-04